

## **Summary of Cancer Incidence and Mortality for Oconee County, SC**

### ***Cancer Incidence in Oconee County***

The first step in the analysis of cancer data for this county was to look at the number of new cancer cases diagnosed in the county and compare this to the number of cancer cases expected this county (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of each county.

Table 1 shows what types of cancer were diagnosed in Oconee County from 1996-2000, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected in Oconee County. The most common types of cancer in this county were lung, prostate, female breast, and colon/rectum. These types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis revealed one specific type of cancer (**Thyroid**) where the number of cases was significantly higher than expected. One proven risk factor for papillary thyroid cancer is a history of head or neck radiation treatments as a child. In the past, children were sometimes treated with radiation for acne, fungus infections of the scalp, an enlarged thymus gland, or to shrink tonsils or adenoids. Years later, studies linked these treatments to an increased risk of thyroid cancer. Also, people with certain inherited medical conditions (i.e. Gardner's Syndrome, Cowden's disease and familial polyposis) are at higher risk of developing thyroid cancer. A similar number of thyroid cancer cases occurred year to year over the five year time span, which indicates a cluster is not likely.

### ***Cancer Deaths in Oconee County***

To assess cancer deaths in Oconee County, cancer mortality data from 1998-2002 were used. The process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred in Oconee County and the number expected. Overall, the number of cancer deaths that occurred was less than expected in Oconee County.

The analysis revealed no specific types of cancer where the number of deaths was significantly higher than expected.

### ***Conclusions***

To summarize, overall a fewer number of cancer cases occurred in Oconee County than expected. The number of thyroid cancers in Oconee County was significantly higher than expected. Exposure to head and neck radiation treatments in childhood and inherited medical conditions increase the risk for thyroid cancer. The number of cancer deaths in Oconee County was less than expected.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer rather than more common cancers like lung or prostate cancers. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, the South Carolina Central Cancer Registry determined there is no evidence of cancer clustering in Oconee County.

For questions about this report, please contact Susan Bolick-Aldrich, MSPH, Director of the South Carolina Central Cancer Registry.

### ***Report provided by:***

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**Table 1. Analysis of New Cancer Cases in Oconee County, 1996-2000**

<b>Site</b>	<b>Observed</b>	<b>Expected</b>	<b>Observed/Expected</b>	<b>Chi-SquareTest*</b>
Lung/Bronchus	248	290.43	0.85	6.20
Prostate	233	322.15	0.72	24.67
Breast (Female)	231	250.65	0.92	1.54
Colon/Rectum	188	204.56	0.92	1.34
Bladder	78	70.93	1.10	0.71
Non-Hodgkin Lymphoma	63	57.21	1.10	0.59
Melanoma	54	57.31	0.94	0.19
Uterus	52	42.49	1.22	2.13
Leukemia	43	32.76	1.31	3.20
Kidney/Renal Pelvis	41	44.93	0.91	0.34
Pancreas	35	39.92	0.88	0.61
Ovary	29	27.92	1.04	0.04
Oral/Pharynx	27	50.29	0.54	10.78
<b>Thyroid</b>	<b>26</b>	<b>16.67</b>	<b>1.56</b>	<b>5.22</b>
Brain/CNS	24	22.95	1.05	0.05
Cervix	21	21.63	0.97	0.02
Stomach	19	27.94	0.68	2.86
Multiple Myeloma	17	20.09	0.85	0.48
Larynx	16	22.51	0.71	1.88
Esophagus	11	24.93	0.44	7.78
Other Female	10	8.58	1.17	0.24
Other Digestive	8	7.52	1.06	0.03
Hodgkin Disease	7	6.86	1.02	0.00
Soft Tissue	6	9.01	0.67	1.01
Other Respiratory	5	6.30	0.79	0.27
Liver	4	12.37	0.32	5.67
Testis	4	6.02	0.66	0.68
Small Intestine	2	5.05	0.40	1.84
Unknown/III-Defined	42	NA	NA	NA
All Sites	1574	1777.95	0.89	23.39

Excludes in situ cases of cancer to allow for comparison.

Cancer sites with less than 5 cases of cancer expected are not analyzed due to the unreliability of statistical tests based on small numbers. These sites have been removed from this table.

\*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department Of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201  
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**Table 2. Analysis of Cancer Deaths in Oconee County, 1998-2002**

<b>CancerSite</b>	<b>Observed</b>	<b>Expected</b>	<b>Observed/Expected</b>	<b>Chi-SquareTest*</b>
Lung/Bronchus	232	251.31	0.92	1.48
Colon/Rectum	87	80.88	1.08	0.46
Female Breast	58	58.15	1.00	0.00
Pancreas	45	45.82	0.98	0.01
Unknown/III-Defined	44	49.74	0.88	0.66
Leukemia	27	28.13	0.96	0.05
Prostate	26	57.58	0.45	17.32
Non-Hodgkins Disease	25	29.58	0.85	0.71
Brain/CNS	22	20.61	1.07	0.09
Kidney/Renal Pelvis	22	17.03	1.29	1.45
Ovary	21	18.45	1.14	0.35
Oral/Pharynx	17	15.62	1.09	0.12
Multiple Myeloma	16	19.29	0.83	0.56
Esophagus	14	20.95	0.67	2.30
Stomach	13	20.59	0.63	2.80
Liver	13	15.90	0.82	0.53
Bladder	12	15.40	0.78	0.75
Melanoma Of Skin	10	9.23	1.08	0.06
Uterus	8	9.39	0.85	0.21
Cervix	8	7.68	1.04	0.01
Larynx	2	6.78	0.29	3.37
Soft Tissue	1	5.65	0.18	3.83
All Sites	747	830.02	0.90	8.30

Excludes in situ cases of cancer to allow for comparison.

Cancer sites with less than 5 cancer deaths expected are not analyzed due to the unreliability of statistical tests based on small numbers.

\*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

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